

ACTUATOR ASSISTED BLOW-OFF VALVE ASSEMBLY TO CONTROL COOLANT FLOW IN AN INTERNAL COMBUSTION ENGINE

Abstract

A blow-off valve assembly for an internal combustion engine cooling system is biased to prevent coolant flow from the cooling system to the internal combustion engine when a pressure of the coolant is below a threshold. An actuating assembly is configured to impart a force on the blow-off valve sufficient to overcome the bias of the blow-off valve assembly when pressure of the coolant is insufficient to open the blow-off valve assembly. An engine control unit (ECU) is configured to determine if engine operating conditions warrant activation of the actuating assembly to unseat the blow-off valve if coolant pressure is below the threshold and, if so, transmit an actuating command signal to the actuating assembly to open the blow-off valve.